

U.S. DEPARTMENT OF COMMERCE
PATENT AND TRADEMARK OFFICE

**INFORMATION DISCLOSURE
STATEMENT**

Docket Number
10644/50103

Application Number
To be assigned

Filing Date
Herewith

Examiner
To be assigned

Art Unit
To be assigned

Invention Title
**ORGANIC PHOTSENSITIVE
OPTOELECTRONIC DEVICE WITH AN
EXCITON BLOCKING LAYER**

Inventor(s)
FORREST et al.

Address to:

Mail Stop Patent Application

Commissioner for Patents

P.O. Box 1450

Alexandria, Virginia 22313-1450

1. In accordance with the duty of disclosure under 37 C.F.R. § 1.56 and in conformance with the procedures of 37 C.F.R. §§ 1.97 and 1.98 and M.P.E.P. § 609, attorneys for Applicants hereby bring the following references to the attention of the Examiner. The references are listed on the attached modified PTO Form No. 1449. It is respectfully requested that the information be expressly considered during the prosecution of this application, and that the references be made of record therein and appear among the "References Cited" on any patent to issue therefrom.
2. A copy of each patent, publication or other information listed on the modified PTO form 1449 is not enclosed since they were previously cited by or submitted to the Patent Office in prior application Serial Nos. 10/212,661, filed on **August 5, 2002** and 09/449,801, filed **November 26, 1999**, now U.S. Patent Number **6,451,415**, which is relied upon for an earlier filing date under 35 U.S.C. 120.

Dated: 1/17/04

By: 

Thomas F. Meagher (Reg. No. 29,831)

KENYON & KENYON
One Broadway
New York, N.Y. 10004
(212) 425-7200 (telephone)
(212) 425-5288 (facsimile)

| | | |
|--|---------------------------------|-------------------------------------|
| INFORMATION DISCLOSURE STATEMENT BY APPLICANT Form PTO-1449 | ATTY. DOCKET NO. 10644/50103 | SERIAL NO. To be assigned |
| | APPLICANT FORREST et al. | |
| | FILING DATE Herewith | GROUP To be assigned |

U. S. PATENT DOCUMENTS

| EXAMINER INITIAL | PATENT NUMBER | PATENT DATE | NAME | CLASS | SUBCLASS | FILING DATE |
|---------------------|------------------|--------------------|----------------------|-------|----------|----------------|
| | 5,703,436 | December 30, 1997 | Forrest et al. | | | |
| | 5,121,183 | June 9, 1992 | Ogasawara et al. | | | |
| | 5,201,961 | April 13, 1993 | Yoshikawa et al. | | | |
| | 5,315,129 | May 24, 1994 | Forrest et al. | | | |
| | 5,350,459 | September 27, 1994 | Suzuki et al. | | | |
| | 5,652,067 | July 1997 | Ito et al. | | | |
| | 6,097,147 | August 1, 2000 | Baldo et al. | | | |
| | 6,198,091 | March 6, 2001 | Forrest et al. | | | |
| | 6,198,092 | March 6, 2001 | Bulovic et al. | | | |
| | 6,278,055 | August 21, 2001 | Forrest et al. | | | |
| | 6,297,495 | October 2, 2001 | Bulovic et al. | | | |
| | 6,333,458 | December 25, 2001 | Forrest et al. | | | |
| | 6,352,777 | March 5, 2002 | Bulovic et al. | | | |
| | 6,420,031 | July 16, 2002 | Parthasarathy et al. | | | |
| | 6,451,415 | September 17, 2002 | Forrest et al. | | | |

FOREIGN PATENT DOCUMENTS

| EXAMINER INITIAL | DOCUMENT NUMBER | DATE | COUNTRY | CLASS | SUBCLASS | TRANSLATION | |
|---------------------|--------------------|------|---------|-------|----------|-------------|----|
| | | | | | | YES | NO |
| | | | | | | | |

OTHER DOCUMENTS

| EXAMINER INITIAL | | AUTHOR, TITLE, DATE, PERTINENT PAGES, ETC. |
|---------------------|--|--|
| | | THOMPSON et al., U.S. Patent Application Serial No. 09/311,126, "Very High Efficiency Organic Light Emitting Devices Based on Electrophosphorescence", filed May 13, 1999. |
| | | M. Granström, et al., "Laminated fabrication of polymeric photovoltaic diodes", <u>Nature</u> , Vol. 395, pp 257-260 (September 17, 1998). |
| | | G. Yu, et al., "Polymer Photovoltaic Cells: Enhanced efficiencies via a network of internal donor-acceptor heterojunctions", <u>Science</u> , Vol. 270, pp. 1789-1791 (December 15, 1995). |
| | | U. Bach, et al., "Solid-state dye-sensitized mesoporous TiO ₂ solar cells with high photon-to-electron conversion efficiencies, <u>Nature</u> , Vol. 395, pp 583-585 (October 8, 1998). |

| EXAMINER INITIAL | | AUTHOR, TITLE, DATE, PERTINENT PAGES, ETC. |
|---------------------|--|---|
| | | A. Shah, et al., "Photovoltaic Technology: The case for thin-film solar cells", <u>Science</u> , Vol. 285, pp 692-698 (July 30, 1999). |
| | | C.W. Tang, "Two-layer organic photovoltaic cell", <u>Appl. Phys. Lett.</u> , 48(2), pp 183-185 (January 13, 1986). |
| | | C. Arbour, et al., "Surface Chemistries and Photoelectrochemistries of Thin Films Molecular Semiconductor Materials", <u>Mol. Cryst. Liq. Cryst.</u> , Vol. 183, 307-320 (1990). |
| | | Y. Hirose, et al., "Chemistry and electronic properties of metal-organic semiconductor interfaces: Al, Ti, In, Sn, Ag, and Au on PTCDA", <u>Phys. Rev. B</u> , Vol. 54, No. 19, pp 13 748-13 758 (November 15, 1996). |
| | | D.F. O'Brien, et al., "Improved energy transfer in electrophosphorescent devices", <u>Applied Physics Letters</u> , Vol. 74, Number 3, pp. 442-444, (January 18, 1999). |
| | | S.E. Burns, et al., "Measurements of optical electric field intensities in microcavities using thin emissive polymer films", <u>Adv. Mater.</u> , Vol. 9, No. 5, pp 395-397 (1997). |
| | | P.E. Burrows, et al., "Relationship Between Electroluminescence and Current Transport in organic heterojunction light-emitting devices", <u>J. Appl. Phys.</u> , Vol. 79, No. 10, pp. 7991-8006 (May 15, 1996). |
| | | S.R. Forrest, "Ultrathin Organic Films Grown by Organic Molecular Beam Deposition and Related Techniques", <u>Chem. Rev.</u> , Vol. 97, No. 6, 1793-1896 (1997). |
| | | J.J. M. Halls, et al., Exciton diffusion and dissociation in a poly(p-phenylenevinylene)/C ₆₀ heterojunction photovoltaic cell, <u>Appl. Phys. Lett.</u> , 68(22), pp 3120-3122 (May 27, 1996). |
| | | L.A.A. Pettersson, et al., "Modeling photocurrent action spectra of photovoltaic devices based on organic thin films", <u>J. Appl. Phys.</u> , Vol. 86, No. 1, pp 487-496 (July 1, 1999). |
| | | X. Deng, et al., "Improved μ c-Si p-Layer and a-Si i-Layer materials using VHF plasma deposition", <u>26th IEEE PVSC Conf. Record</u> , p. 591-594, IEEE Press, NY (Sept. 30-Oct. 3, 1997). |
| | | S.R. Wenham, et al., <u>Applied Photovoltaics</u> , Appendix B, Bridge Printery, Sydney (1994). |

| EXAMINER | DATE CONSIDERED |
|---|-----------------|
| EXAMINER: Initial if citation considered, whether or not citation is in conformance with M.P.E.P. 609; draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant. | |